



**CONSULTING ENGINEER'S REPORT**

*for the*

**West Virginia Parkways, Economic Development and  
Tourism Authority**

**CONSULTING ENGINEER'S DETAILED  
RECOMMENDATIONS BASED ON STUDY OF WV  
TURNPIKE'S NEEDS FOR ESTIMATED  
OPERATING EXPENSES, RENEWAL AND  
REPLACEMENT REQUIREMENTS, AND  
DEFERRED MAINTENANCE NEEDS AND  
CAPITAL COSTS**

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## EXECUTIVE SUMMARY

The purpose of this report is to provide information from the General Engineering Consultant of the West Virginia Parkways, Economic Development and Tourism Authority (Authority) on:

- (1) the current condition of the West Virginia Turnpike (Turnpike),
- (2) the Turnpike's annual needs for operating expenses (see Table No.1),
- (3) the Turnpike's annual needs for renewal and replacement requirements (see Tables No.2 and 2A),
- (4) the Turnpike's essential deferred maintenance and capital needs totaling \$335 million to eliminate the back log of maintenance items put on hold for lack of funds (see Table No. 3), and
- (5) the recommendations of HNTB as to how to address these needs,

based on its latest inspections, its long-term familiarity with the Turnpike and its professional engineering judgment.

Turnpike operations are financed entirely by Turnpike toll revenues. Toll revenues must pay for operating and routine maintenance expenses, debt service, renewal and replacement requirements and deferred maintenance and capital needs.

The Turnpike has experienced a significant traffic decline, particularly in the last several months. Revenues have fallen from \$61.763 million in FY 2006 to an estimated \$53 million by the end of FY2009. This decline has been caused by high fuel prices, the current economic downturn, together with rapidly increasing costs to repair, rehabilitate and reconstruct the Turnpike's aging bridges, roadways and facilities. These factors resulted in lower Toll revenues and a significant increase in the backlog of essential deferred maintenance and capital needs which are the repairs necessary to operate and maintain the Turnpike in good repair, working order and condition in future fiscal years, which is a requirement of the Authority's Turnpike revenue bond indenture, as amended (the "Indenture").

The estimated essential deferred maintenance and capital needs over the next ten years total \$335 million. (See Table No. 3). These needs include \$242 million of paving needs, \$6 million for the new toll collection system and \$87 million for other needs such as bridge painting and repair, guardrail, culvert repair, equipment, and facilities. This report references and discusses these needs.

There has been a continuing increase in the renewal and replacement requirements in the last few years due to the substantial and growing backlog of essential deferred maintenance and capital needs, and these renewal and replacement requirements will continue to grow unless the Authority can satisfactorily address this backlog. Given the reduced Toll revenues, the Authority also will not be able to have a paving program in future fiscal years, which will accelerate future increases in annual renewal and replacement requirements. The Authority faces a scenario where it will not have sufficient revenues to meet the applicable debt service coverage tests under the Indenture in future years without a toll increase.

**THE BACKLOG OF ESSENTIAL DEFERRED MAINTENANCE AND CAPITAL NEEDS HAS GROWN SIGNIFICANTLY FROM FY 2007 TO UPCOMING FY 2010 AND IS NOW APPROACHING THE LEVEL THAT, AS THE CONSULTING ENGINEERS, HNTB WILL NOT BE ABLE TO CERTIFY IN FUTURE ANNUAL REPORTS, REQUIRED UNDER THE INDENTURE, THAT THE TURNPIKE IS BEING OPERATED AND MAINTAINED IN A "SOUND AND ECONOMICAL MANNER" CONSISTENT "WITH SOUND MANAGEMENT PRACTICES AND PRINCIPLES" AND THAT IT IS BEING KEPT IN GOOD REPAIR, WORKING ORDER AND CONDITION. IT IS CRITICAL THAT THE AUTHORITY IMMEDIATELY BEGIN TO ADDRESS THIS BACKLOG OF ESSENTIAL NEEDED REPAIRS.**

This report recommends a 10 year program to address the most critical of this backlog of needs. This report explains the reasoning behind this recommendation.

Paving needs comprise most of the critical needs facing the Authority. Currently, 55% of the Turnpike pavements are rated to be in fair or poor condition. The \$242 million of paving needs consists of rehabilitation of the original concrete pavements and overlays to preserve existing asphalt pavements. Approximately 1/3 of the pavement is comprised of the original concrete pavement, some now approaching or exceeding 30 years old. These sections of pavement have the greatest safety concerns and the roughest ride, due to broken and faulted concrete slabs. The proposed 10 year program detailed in this report would address the need to rehabilitate the original concrete sections and develop a preservation plan to preserve all the asphalt sections. At the end of this 10 year program 80% of all Turnpike pavements will be in very good or good condition.

In addition, the Authority is currently in the process of upgrading its nearly 10 year old computer-based toll collection system (installed 1999-2000). Replacement or spare parts are difficult to obtain and expensive. Computer operating systems and software are at or near obsolescence. A failure of the system would present serious and major operational and financial issues for the Authority (or any toll road). This system upgrade is essential and will provide for reliable and cost effective toll collections. The estimated cost of this upgrade is \$6 million.

The proposed 10 year program will also address the most essential (\$87 million) of the remaining other needs. This will include but not be limited to bridge painting and repairs, guardrail replacement, culvert repairs, equipment replacement, signing and lighting repairs and pavement repairs such as pothole patching.

This program will allow the Authority to ensure that the Turnpike is safe and properly maintained.

**IN THE PROFESSIONAL ENGINEERING OPINION OF HNTB, THIS PROPOSED 10 YEAR PROGRAM IS THE MINIMUM EFFORT NEEDED TO MEET THE TURNPIKE INDENTURE'S DEBT SERVICE COVERAGE REQUIREMENTS AND "GOOD REPAIR" REQUIREMENTS IN THE FUTURE.**

## **1.0 INTRODUCTION AND PURPOSE**

The purpose of this document is to provide a report from the General Engineering Consultant of the West Virginia Parkways, Economic Development and Tourism Authority (Authority) on the current physical condition of the West Virginia Turnpike (Turnpike), the financial condition of

the Authority, to outline projects currently in progress on the Turnpike, and to document the adequacy or inadequacy of the current programs addressing the elimination of the backlog of essential deferred maintenance and capital needs.

The Turnpike is experiencing a simultaneous combination of: (1) a traffic decline (which has gotten significantly worse in the last few months as the national and global recession has deepened); (2) rapidly increasing costs (including, for example, operating expenses and paving costs); (3) decreasing toll revenues (the only source of funds for Turnpike operations); (4) an increasing backlog of essential deferred maintenance and capital needs; and (5) substantial increases in renewal and replacement requirements.

This report identifies and details these problems and needs and outlines how they must be addressed in our professional engineering judgment.

## **2.0 THE WEST VIRGINIA TURNPIKE SYSTEM**

### **2.1 OVERVIEW OF THE WEST VIRGINIA TURNPIKE SYSTEM**

The West Virginia Turnpike, shown in Figure 1, is an 88-mile long toll road extending from Charleston to Princeton, West Virginia. Originally constructed during the 1950's as a two-lane toll road through rugged mountains with passing lanes on steep grades, there were originally six interchanges. Eleven additional interchanges, including the I-64 Interchange south of Beckley, were added during a 15 year long upgrading period from 1972 to 1987. This resulted in a scenic, modern four-lane divided interstate highway with construction costs of nearly \$741 million. Financing was accomplished through the use of federal highway funds on a 90% to 10% matching basis. The West Virginia Division of Highways (WVDOH) supplied the 10% matching funds. The Authority repaid the 10% matching funds to the WVDOH with the last payment made in June, 1994. An eighteenth interchange was constructed at Beckley utilizing Turnpike funds. It was opened to traffic May 22, 1996. It eliminated a dangerous south bound merge condition, provided access for northbound and southbound traffic to the Beckley Travel Plaza, Caperton Center, and Raleigh County Route 11 (Dry Hill Road).

The Turnpike originally financed in the 1950's through Turnpike toll revenue bonds. Those bonds went into default shortly after completion of the original Turnpike because of insufficient traffic and toll revenues. After the upgrade of the Turnpike to interstate standards, and as other interstate highways connecting to the Turnpike were completed (I-64, I-77 and I-79), the Turnpike that able to cure that default. In 1989 the Authority was formed and issued new Turnpike revenue and refunding bonds to refinance the original 1950's bonds, to repay the WVDOH its matching funds for the upgrade of the Turnpike to interstate standards, and issuance costs. The 1989 bonds were refunded in 1993 to take advantage of lower interest rates, and have been refunded in 2002, 2003 and 2008. Under the Indenture, the Authority has various specific covenants concerning operation and maintenance of the Turnpike (including the "good repair" covenant and the bond debt service coverage requirements mentioned above).

Tolls are collected at three (3) mainline barrier Toll Plazas and at the US 19 Interchange Plaza. Data regarding transactions and revenue are included in the Traffic Engineers Report.

Turnpike operations are financed entirely by Turnpike toll revenues. Toll revenues must pay for operating and routine maintenance expenses, debt service, renewal and replacement requirements and deferred maintenance and capital needs.

The Turnpike has experienced a significant traffic decline, particularly in the last several months. Revenues have fallen from \$61.763 million in FY 2006 to an estimated \$53 million by the end of FY2009. This decline has been caused by high fuel prices, the current economic downturn, together with rapidly increasing costs to repair, rehabilitate and reconstruct the Turnpike's aging bridges, roadways and facilities. These factors resulted in lower Toll revenues and a significant increase in the backlog of essential deferred maintenance and capital needs which are the repairs necessary to operate and maintain the Turnpike in good repair, working order and condition in future fiscal years, which is a requirement of the Authority's Turnpike revenue bond indenture, as amended (the "Indenture").

## **2.2 TURNPIKE SYSTEM CONDITION REPORTS INCLUDING REQUIRED MAINTENANCE AND REPAIR NEEDS**

As part of the West Virginia Parkways, Economic Development and Tourism Authority's overall financial planning, HNTB has reviewed the estimated total project costs for current and proposed West Virginia Turnpike projects, and have prepared estimates of Operating Expenses and Renewal and Replacement account requirements for the next ten years. Specifically, HNTB has evaluated costs and other aspects of the following:

- Physical Condition
- 2010-2019 Operating Expenses (Table No. 1)
- 2010-2019 Renewal and Replacement Account (Table No. 2)
- 2010-2019 Essential Deferred Maintenance and Capital Needs (Table No. 3)

The following sections report on the current physical condition of the Turnpike and descriptions and estimated costs of the backlog of essential deferred maintenance and capital needs.

### **General Physical Condition**

Applying Federal Highway Agency (FHWA) developed standards of comparison, 55% of Turnpike roadways are in fair to poor condition while only 45% are currently rated in better condition.

Specific descriptions and characterizations of roadway and related area conditions and maintenance problems are set out below.

### **Pavement and Shoulders**

The Turnpike roadway is experiencing problems with transverse roadway pavement cracks between the pavement joints (transverse cracks are cracks that run across the roadway). Heavy trucks, in conjunction with water encroachment, have caused these cracks to fault in 30- year old (or older) concrete pavements. Those pavements also are experiencing related problems with substantive faulted concrete slabs, broken pavement, pot holes and poor subsurface drainage.

HNTB has been carefully inspecting and preparing accurate reports on the condition of the West Virginia Turnpike for over 50 years. Yearly inspections of bridges, pavements, culverts, signs, lighting, pavement markings and other structures along or under the Turnpike are performed. The Annual Report, prepared by HNTB, contains information on the conditions of the various assets of the Turnpike and contains HNTB's funding recommendation for Renewal and Replacement Requirements for the next fiscal year.

HNTB is also required by the Turnpike bond indenture covenants to inspect and certify that the Turnpike is being operated and maintained in a sound and economical manner consistent with sound management practices and principles, and is being kept in good repair, working order and condition. HNTB also prepares the yearly report which details the necessary repairs needed to maintain the Turnpike. Due to the deteriorating condition of the Turnpike, it has been necessary for HNTB to expend extra efforts certifying and documenting these needs.

Paving needs comprise the vast majority of the critical and essential repair needs facing the Authority. The Turnpike mainline roadways were originally constructed in the early 1950's of Portland Cement Concrete (PCC), and substantially redone in the 1970's and 1980's when the Turnpike was upgraded to interstate standards.

Today, approximately 1/3 of the current pavement consists of the original concrete pavements, some now 30 years old or older, and thin overlays of the original concrete pavements. These sections of old concrete pavements represent approximately 72% of the \$335 million essential needs and constitute the most significant repair needs because of safety concerns and rough ride, due to broken and faulted concrete slabs. Currently 55% of the pavements are rated to be in fair or poor condition.

The 10 year program recommended in this report will address the \$242 million paving needs. Those paving needs consist of \$183 million in rehabilitation of the original concrete pavements, and \$59 million in thin overlays to preserve existing asphalt pavements.

This proposed 10 year program will address the need to rehabilitate the original concrete pavements and develop a preservation plan to preserve all the asphalt pavements. At the end of this 10 year program in 2019, the maturity date for all turnpike bonds, 80% of all Turnpike pavements will be in very good or good condition.

### **Bridge Approaches**

Bridge approaches located on embankments settle relative to the bridge decks which are supported by substructure units firmly founded on bedrock or supported by piling driven to bedrock. Settled bridge approaches cause vehicles to bounce and cause the bridges to vibrate excessively. Periodic mill and overlay of the approaches is required.

### **Embankments and Cuts**

Authority personnel continually remove slide debris and maintain roadway ditches, benches and backslopes. An interceptor wall recently was constructed near Mile 51 to prevent slide debris from obstructing traffic in an area subject to frequent slides.

### **Drainage Facilities**

Culverts are subject to corrosion due to acid water runoff. There also are broken or collapsed pipes, rusted and leaking pipe inverts, and erosion at the outlet ends of pipes. Ditches require continued maintenance and clean-out. Approximately 35% of roadway pipes will need to be replaced or rehabilitated within the next 10 years.

## **Guardrail and Fencing**

Recent inspections found that some of the older guardrail sections that have been exposed to deicing salts for many years are badly deteriorated with rusted beams and posts and approximately 35% will need to be replaced within the next 10 years.

## **Bridges**

There are 116 bridges located on the Turnpike (106 painted steel bridges and 10 concrete bridges) remain in relatively good condition for their age, however, they require continual sweeping deicing salts and abrasives from the decks, washing down steelwork exposed to deicing salts, sealing deck cracks, repairing defects and damages and repainting of structures at scheduled intervals. Since the upgrade of the Turnpike to interstate standards, all of the 106 painted steel bridges including the two major bridges over the Bluestone River and the two major bridges crossing the Kanawha River near Charleston have required repainting.

All the bridges have transverse cracks that allow de-icing salt solutions onto the steelwork causing corrosion, which in turn, causes the concrete deck to chip along the edges of the beams. Delaminations and spalls are forming on the bottoms of those bridge decks where the bottom layer of deck reinforcing steel was not epoxy coated. (Delaminations and spalls essentially are holes in the bottom of the bridge decks.)

The Federal Highway Administration (FHWA) mandates that these bridges be inspected every two (2) years. Approximately one half of the bridges are scheduled for inspection each year. In-Depth Bridge Inspections are required every six (6) years with Periodic Bridge Inspections at two-year intervals between. Underwater Bridge Inspections are required every five (5) years.

In addition to the bridge inspection reports, "Structure Inventory and Appraisal" forms are required. These are ten (10) page reports that provide a variety of information in coded form that is required by the FHWA.

In accordance with an FHWA mandate, all of the West Virginia Turnpike bridges have been rated to determine maximum safe loads for the bridges. With regard to bridges, the Authority has incurred costs in analyzing overweight vehicles that may use the Turnpike's bridges. All bridges have been inventoried and rated, and are being inspected, in accordance with FHWA Standards. Additional inspections were made on the Bluestone River bridges in accordance with state and federal instructions following the Minnesota Bridge collapse.

## **Toll Collection and Recording System**

An antiquated toll system was replaced with an automated electronic toll collection system in 1999-2000. That system now is nearly 10 years old and is in need of replacement. Replacement or spare parts are difficult to obtain and expensive. Computer operating systems and software are at or near obsolescence.

A failure of the electronic toll collection system would present serious and major operational and financial issues for the Authority (or any toll road). Therefore, an upgrade of this system is essential and will provide for reliable and cost-effective toll collections.



Phase I of this toll system upgrade is nearing completion. Phase II deals with preparation of the request for proposal to seek a contractor or contractors to design and install the new system. The cost of the contract for acquiring and installing the new toll system upgrade is projected at \$6 million.

### **Other Miscellaneous Operations and Maintenance Required**

In addition to the detailed areas of maintenance, repairs and operations required to be performed by the Authority as outlined above, the Authority is responsible for State police protection on the Turnpike and for one Public Service Commission (PSC) Commercial Motor Vehicle Officer and Vehicle assigned to the Turnpike and for routine maintenance, repairs, replacements, reconstruction and renovation of the following facilities referenced below. These also must be paid for from Turnpike toll revenue. Such other miscellaneous maintenance and repairs include the following:

1. Signing, lighting, delineation and pavement marking;
2. Rest areas, travel plazas and tourist information and welcome centers;
3. Toll plazas and toll equipment;
4. Maintenance areas and related equipment;
5. Communication systems;
6. Administrative headquarters; and
7. Various, vehicles, equipment and heavy equipment used in the operation and maintenance of the turnpike roadway.

## **2.3 OPERATING EXPENSES**

Operating Expenses include all the Authority's expenses in operating, maintaining and servicing the Turnpike system and otherwise carrying out and administering its related programs. Operating expenses include, for example, salaries, supplies, utilities, ordinary maintenance and repairs, insurance premiums, legal, accounting, management, traffic engineers and consulting engineers. Operating expenses do not include costs determined by the Consulting Engineers to be Renewal and Replacement requirements (see Section 2.4). Operating expenses also do not include depreciation or other non-cash accounting accruals or capital needs including major pavement rehabilitation and preservation as described further below.

The Authority has been proactive in implementing cost-saving measures. These cost-saving measures have included utilizing modern technology, utilizing the purchasing power created through the State of West Virginia's Purchasing Division, and implementing organizational efficiencies over the past 10 years. The implementation of these and other cost-cutting measures have limited the growth rate of operating expenses over the past 10 years. However, increases in costs outside the control of the Authority, such as health insurance premiums, road salt and construction materials are making it very difficult for the Authority to implement any further substantial cost savings in operating expenses.

A number of assumptions were used to project the Operating Expenses for fiscal years 2010 through 2019 including the following:

1. Direct Salaries with projected growth of 1.5%.
2. Benefits with projected growth of 5.0%
3. All other operating Accounts with projected growth of 3.0%.
4. Non-departmental costs with projected growth of 3.0%.

Based upon all these factors, as well as specific knowledge of the operation of the Turnpike, projections for Operating Expenses for the fiscal years 2010 through 2019 are as follows:

Table No. 1

<b>Year</b>	<b>Estimated Operating Expenses (In thousands)</b>
2010	\$33,003
2011	33,885
2012	34,797
2013	35,740
2014	36,666
2015	37,726
2016	38,720
2017	39,851
2018	40,971
2019	42,129

## **2.4 RENEWAL AND REPLACEMENT**

Under the Indenture, annual Renewal and Replacement requirements must be determined and certified by the Consulting Engineers. Under the Indenture, Renewal and Replacement requirements exclude annual Operating Expenses and include those expenditures required in that year for keeping the Turnpike open to public travel and use.

Accordingly, Renewal and Replacement requirements constitute the absolute minimum of essential capital outlays for a given fiscal year. Renewal and Replacement requirements do not include longer-term capital needs of the Turnpike (that is, those which are not necessary to keep the Turnpike open for public travel and use in the fiscal year in question but which must be addressed in a reasonable time frame in order to meet the Authority's Indenture covenant to operate, keep and maintain the Turnpike in "good repair, working order and condition" and in a "sound and economical manner" consistent with "sound management practices and principles.") This "good repair" covenant is a separate requirement of the Indenture, in addition to the debt service coverage tests under the Indenture.

There has been a continuing increase in the Renewal and Replacement requirements in the last few years due to the substantial and growing backlog of essential deferred maintenance and capital needs. These Renewal and Replacement requirements will continue to grow unless the Authority can satisfactorily address this backlog.

Given the reduced Toll revenues, the Authority also will not be able to have a paving program in future fiscal years, which will further accelerate future increases in annual Renewal and Replacement requirements. See Table 2A (Renewal & Replacement Requirements If No Toll Increase). Since the size of the Renewal and Replacement requirement is an element of the ability to meet one of the Authority's bond debt coverage tests, the Authority faces the prospect of not having sufficient revenue to meet that required debt service coverage test in the near term without a toll increase.

The Authority thus faces a scenario where it will not have sufficient revenues in future fiscal years to meet all applicable debt service coverage tests under the Indenture, or to meet the separate "good repair" covenant under the Indenture, without a toll increase.

Based on the proposed 10 year program, our recommendations for Renewal and Replacement requirements for the fiscal years 2010 through 2019 are:

Table No. 2

<b>Year</b>	<b>Estimated Renewal &amp; Replacement Requirements (In thousands)</b>
2010	\$8,743
2011	8,040
2012	7,837
2013	7,859
2014	8,482
2015	9,156
2016	9,151
2017	9,133
2018	9,099
2019	9,052

As noted above, if there is no toll increase, future Renewal and Replacement requirements will be substantially greater than set forth in Table 2 above.

Based on the magnitude of the deferred maintenance and capital needs, reduced toll revenues and increased costs, our recommendations for Renewal and Replacement requirements for the fiscal years 2010 through 2019 assuming no toll increase (and therefore no program to address the essential deferred maintenance and capital needs) are:

Table No. 2A  
(Annual Renewal and Replacement Requirements Assuming No Toll Increase)

<b>Year</b>	<b>Estimated Renewal &amp; Replacement Requirements Assuming No Toll Increase (In thousands)</b>
2010	\$11,743
2011	13,796
2012	15,994
2013	19,775
2014	23,714
2015	27,225
2016	31,874
2017	35,670
2018	39,618
2019	43,724

## 2.5 FUNDING NECESSARY TO MEET ESSENTIAL DEFERRED MAINTENANCE AND CAPITAL NEEDS

The Authority, in our professional judgment, needs to fund essential deferred maintenance and capital needs over a 10 year period. See Table No. 3 below.

Table No. 3

<b>ESSENTIAL DEFERRED MAINTENANCE AND CAPITAL NEEDS (<i>IN THOUSANDS</i>) ADDRESSING THE REDUCTION OF THE BACKLOG OF ESSENTIAL NEEDED REPAIRS</b>					
<b>YEAR</b>	<b>Renewal and Replacement</b>	<b>Pavement Rehabilitation</b>	<b>Pavement Preservation</b>	<b>Toll System Upgrade</b>	<b>TOTAL</b>
2010	\$8,743	\$15,288	\$3,522	\$1,200	<b>\$28,753</b>
2011	8,040	15,900	4,860	1,200	<b>30,000</b>
2012	7,837	16,536	6,300	1,200	<b>31,873</b>
2013	7,859	17,197	6,126	1,200	<b>32,382</b>
2014	8,482	17,885	5,732	1,200	<b>33,299</b>
2015	9,156	18,600	5,962		<b>33,718</b>
2016	9,151	19,344	6,200		<b>34,695</b>
2017	9,133	20,118	6,448		<b>35,699</b>
2018	9,099	20,923	7,001		<b>37,023</b>
2019	9,052	21,760	6,679		<b>37,491</b>
<b>10 Year Funding Need</b>	<b>\$86,552</b>	<b>\$183,551</b>	<b>\$58,830</b>	<b>\$6,000</b>	<b>\$334,933</b>

### **3.0 CONCLUSION**

**THE BACKLOG OF ESSENTIAL TURNPIKE DEFERRED MAINTENANCE AND CAPITAL NEEDS HAS GROWN SIGNIFICANTLY FROM FY 2007 TO UPCOMING FY 2010 AND IS NOW APPROACHING THE LEVEL THAT, AS THE CONSULTING ENGINEERS FOR THE AUTHORITY, HNTB WILL NOT BE ABLE TO CERTIFY IN FUTURE ANNUAL REPORTS, AS REQUIRED UNDER THE INDENTURE, THAT THE TURNPIKE IS BEING OPERATED AND MAINTAINED IN A "SOUND AND ECONOMICAL MANNER" CONSISTENT "WITH SOUND MANAGEMENT PRACTICES AND PRINCIPLES" AND THAT IT IS BEING KEPT IN "GOOD REPAIR, WORKING ORDER AND CONDITION."**

**IT IS CRITICAL THAT THE AUTHORITY IMMEDIATELY BEGIN TO ADDRESS THIS BACKLOG OF ESSENTIAL NEEDED REPAIRS.**

**IN THE PROFESSIONAL ENGINEERING OPINION OF HNTB, FUNDING THE ESSENTIAL DEFERRED MAINTENANCE AND CAPITAL NEEDS IDENTIFIED ABOVE OVER 10 YEARS (SEE TABLE NO. 3 ABOVE) IS THE MINIMUM EFFORT NEEDED TO MEET BOTH THE TURNPIKE INDENTURE'S DEBT SERVICE COVERAGE REQUIREMENTS AND "GOOD REPAIR" REQUIREMENTS IN THE FUTURE.**

## **ADDITIONAL IMPORTANT INFORMATION**

The estimates for the essential deferred maintenance and capital needs, Operating Expenses, and the Renewal and Replacement requirements contained herein reflect the status of known toll facilities presently being considered, planned in detail or under actual construction. Projected increased traffic volumes prepared by the Authority's Traffic Engineer, as they affect increased labor costs for toll collection and increased maintenance requirements, have also been evaluated in this analysis.

Estimates of probable costs and expenditures for the Essential Deferred Maintenance and Capital Needs Program, Operating and Maintenance Expenses, and Renewal and Replacement requirements in future years are based upon such data as are available and on current construction and living cost trends. These estimates are intended to show a reasonable expense trend over a period of years, rather than exact expenses for any particular year. There could, of course, be years when these expenses could be higher or lower than indicated, depending upon economic conditions and other management and local factors that might affect costs and procedures at that time.

Neither the Authority nor HNTB has control over the cost of labor, materials or construction bidding methods. Accordingly, the Engineer cannot and does not warrant that costs will not vary from the Engineer's estimates of probable cost.

\*       \*       \*

It has been a pleasure to serve as General Consultants from the conception of the West Virginia Turnpike through the retirement of the original Turnpike bonds and beyond. During our 58-year tenure, we have enjoyed an excellent relationship with the past Commission, the current Authority and the staff of the Turnpike. Each of these parties, in the respective areas of responsibility, has contributed materially to protect the bondholder's interests and to provide an excellent transportation facility for the State of West Virginia. We look forward to the continuation of this relationship.